

Remarks

The drawings have been amended per the attached red lined sheet to correct an informality in Figures 7A-7G ("14B" should be --12B--). In addition, the specification has been amended to correct this informality and others as well.

In response to the species restriction requirement contained in the Office Action, Applicants elect the (VII) species (Figures 7A-7I). Claims 34-35, 38, 39-43 and added claims 49-58 read on the elected (VII) species.

The elected claims are directed to a "method for fabricating an interconnect for a semiconductor component having a bumped contact". As shown in Figure 7A, the method can include the steps of: providing a substrate 12B, forming an insulating layer 24B on the substrate 12B, and forming a metal layer 54B on the insulating layer 24B.

As shown in Figures 7B and 7C, the method can also include the steps of etching the metal layer 54B to form blades 28B and leads 22B (Figure 7H) with the blades 28A thereon. As shown in Figure 7H the blades 22B include a peripheral connecting segment 40B. As shown in Figure 7D and 7E, the method can also include the steps of laser machining an opening 64B through the connecting segment 40B and through the substrate 12B. As shown in Figure 7E, the method can also include the steps of electrically insulating the opening 64B, forming a conductive material 66B in the opening 64B and forming a contact pad 38B on the substrate 12B.

As shown in Figure 7F, the method can also include the step of etching a recess 20B in the substrate 12B such that the leads 22B (Figure 7I) are cantilevered over the recess 20B. The leads 22B are sized and shaped to support a bumped contact 16 (Figure 3B) within the recess 20B, and to flex in a z-direction within the recess 20B. In addition, as shown in Figure 7G, the method can include the step of shaping the leads with a radius of curvature R. In the completed contact 18B (Figures 7G and 3B), a conductive via 42B formed by the

conductive material 66B and the laser machined opening 64B provides a straight line electrical path between the leads 22B and the pad 38B.

Independent claim 39 has been amended to recite the steps of forming the connecting segment (40B-Figure 7H) and the conductive via (42B-Figure 7I).

Added independent claim 49 recites the step of laser machining the opening (64B-Figure 7D) for the conductive via (42B-Figure 7I).

Added independent claim 53 recites the step of shaping the leads with a radius of curvature (R-Figure 7G).

Favorable consideration and allowance of claims 34-35, 38, 39-43 and 49-59 is requested. Also being filed with this amendment is an IDS. Should any issues remain, the Examiner is asked to contact the undersigned by telephone.

Dated this 19th day of November 2001.

Respectfully submitted:



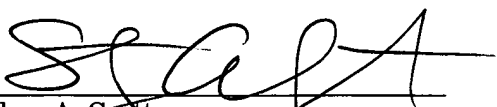
STEPHEN A. GRATTON
Registration No. 28,418
Attorney for Applicants

2764 S. Braun Way
Lakewood, CO 80228
Telephone: (303) 989-6353
FAX (303) 989-6538

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class mail in an envelope addressed to: Assistant Commissioner of Patents, BOX AMENDMENT (FEE), Washington, D.C. on this 19th day of November, 2001.

November 19, 2001
Date of Signature


Stephen A. Gratton
Attorney for Applicants

Marked Version Of Specification Showing Location Of Changes

On page 6,

line 29, change "Figure 1B" to --Figure 2B--.

On page 13,

line 28, change "46A" to --46B--;

line 31, change "46A" to --46B--;

line 33, change "46A" to --46B--.

On page 15,

line 29, change "set" to --wet--.

On page 19,

line 2, change "14B" to --12B--;

line 17, change "14B" to --12B--;

line 25, change "14B" to --12B--.

On page 20, line 34, change "14B" to --12B--.

On page 21, line 11, change "14B" to --12B--.

On page 24,

line 30, change "test circuitry 100" to --test
circuitry 98--.

Marked Version Of Amended Claims Showing Changes

34. (amended) A method for fabricating an interconnect for [testing] a semiconductor component having a bumped contact comprising:

providing a substrate;

[forming a recess in the substrate; and]

forming a plurality of leads on the substrate [;]

[cantilever ed over the substrate and] configured to electrically engage [a] the bumped contact [on the component], each lead having a [cantilever] length, a width, a thickness and a modulus of elasticity selected to provide a desired spring constant; and

forming a recess in the substrate proximate to the leads such that the leads cantilever over the recess and are configured to support the bumped contact and to move within the recess.

35. (amended) The method of claim 34 wherein the forming the plurality of leads step comprises [depositing] forming a metal layer on the substrate and then etching the metal layer.

38. (amended) The method of claim 34 further comprising forming a connecting segment on the substrate for the leads and a conductive via in the substrate in electrical communication with the connecting segment.

[an insulating layer on the recess.]

39. (amended) A method for fabricating an interconnect for [testing] a semiconductor component having a bumped contact comprising:

providing a substrate;

forming a metal layer on the substrate;

etching the metal layer to form a plurality of leads and a connecting segment connecting the leads; [and]

etching a recess in the substrate such that the leads
[each lead] are cantilevered over the [substrate] recess and
movable within the [substrate] recess to electrically engage
[a] the bumped contact [on the component], each lead having a
cantilever length, a width, a thickness and a modulus of
elasticity selected to provide a desired spring constant; and
forming a conductive via in the substrate in electrical
communication with the connecting segment.

40. (amended) The method of claim 39 further
comprising [etching] forming a plurality of projections in
the metal layer [with] such that each lead [comprising]
comprises at least one projection.

41. (amended) The method of claim 39 wherein the
forming the conductive via step comprises laser machining an
opening through the connecting segment and the substrate and
at least partially-filling the opening with a conductive
material.

[leads comprise a metal selected from the group consisting of
tungsten, titanium, nickel, platinum, iridium, or vanadium.]

42. (amended) The method of claim 39 further
comprising shaping the leads with a radius of curvature.
[forming an electrically insulating layer within the recess.]

43. (amended) The method of claim 39 further
comprising forming a contact pad on the substrate in
electrical communication with the connecting segment and the
conductive via.

[wherein the substrate comprises silicon and etching the
recess comprises an anisotropic etch process.]